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36. The mechanism of claim 33 where said rigid projecting mechanism is notched to positively position said weight at different intervals from the user's lips and embouchure muscles.
  37. The mechanism of claim 33 where said rigid projecting mechanism is wave-shaped to positively position said weight at different intervals from the user's lips.
  38. The mechanism of claim 30 wherein said rigid round or tubular end segment is made using firm food-grade material which will hold its shape while being manipulated by the user's lips.
  39. The mechanism of claim 38 where said rigid projecting mechanism has shape and mass which imparts a suitable weight and torque to result in exercising the embouchure muscles, without adding additional weights being added to the mechanism.
  40. The mechanism of claim 38 where said rigid projecting mechanism can support additional weights which can be positioned at variable distances from the lips and embouchure muscles and affixed to the projecting mechanism in such a fashion that they will not move while the user is exercising their embouchure muscles.

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REMARKS – General

Applicant has rewritten all claims to define the invention more particularly and distinctly to overcome the technical rejections and define the invention patentability over the prior art.

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### **The Rejection Of Claims 1 and 10 On Frasure and Nava Is Overcome**

The last O.A. rejected the independent claims 1 and 10 on Frasure and Nava. Claim 1 has been rewritten as claim 21, and claim 10 has been rewritten as claim 30, to define patentability over this reference. Applicant requests reconsideration of this rejection, as now applicable to claims 21 and 30, for the following reasons:

- (1) There is no justification, in Frasure or Nava, or in any other prior art separate from the applicant's disclosure, which suggests that these references be combined.
- (2) Combining the two references would not be physically operative.
- (3) Even if Frasure and Nava were combined, the combination would not show all the novel features of claims 21 and 30.
- (4) The novel features of claims 21 and 30 produce new and unexpected results and hence are unobvious and patentable over these references.

### **The References And Differences Of The Present Invention Thereover**

Prior to discussing the claims and the above four points, applicant will first discuss the references and the general novelty of the present invention and its unobviousness over the references.

**Frasure** uses two separate biting surfaces consisting of a resilient material to exercise the jaw muscles through use of a chewing motion. The biting surfaces are connected through pivoting connections to a handle which allows the user to position the biting surfaces in the mouth. Frasure's design relies exclusively on a chewing mechanism which uses a resilient material as its reactive force and on chewing to exercise the muscles that control jaw movement. Frasure's design has no provision for external weights or torque to supplement the chewing activity. According to Frasure the handle is just a handle, and Frasure neither states nor implies any additional functionality. The

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use of highly resilient chewing surfaces reinforces this concept, as such surfaces are generally incompatible with the application of force through them from the handle while being well suited to the aggressive chewing Frasure describes. The design fails to allow users to exercise any facial muscle group other than the jaw muscles, and cannot be used to effectively exercise the facial muscles apart from the jaw muscles, such as the embouchure muscles of a wind musician which control the aperture formed by the musician's lips when playing an instrument.

Nava shows a rigid segment which attaches to the tongue which allows weights to be added to either side in a dumbbell-like fashion. This design allows variable weights to be positioned such that the tongue can be exercised using varying levels of weight induced force as the reactive mechanisms. The design does not allow the tongue to be subjected to varying torques perpendicular to the plane of the face, and as shown would also not allow the presentation of varying levels of torque which would rotate the tongue parallel to the plane of the face. Although, theoretically this design could accomplish this latter feat with the addition of retention mechanisms to the dumbbell-like arraignment similar to the clamps typically employed as safety mechanisms in weight lifting to prevent weights from unexpectedly sliding off, Nava neither shows nor implies such a use. The design is incompatible with exercising any mouth or facial muscles apart from the tongue, as it provides no segment suitable for use in the mouth and no segment suitable for gripping. As shown it is purely appropriate for exercising the tongue while the tongue is protruding from the mouth and Nava makes no claims or inferences that the device has any use or functionality apart from it's stated use as a tongue exerciser.

The last O.A. noted that Frasure's system does the following:

- (1) Has a rigid segment and a means for applying force to said rigid segment
- (2) Has an extension segment supporting an additional weight
- (3) Has an extension of sufficient mass

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However, in general, to apply force through a rigid segment to an internal portion of the mouth the contact surfaces inside the mouth need to be capable of transferring such force. Frasure's internal surfaces are a resilient compressible material which only provide reactive force by allowing compressible resistance to a chewing action where the resilient material is pinched and released by opposing biting surfaces.

Frasure does not account for the possibility of using the biting surfaces to provide resistance to any other location in the mouth and had specifically designed the biting surfaces to be suitable for biting by hard, opposing biting surfaces.

Frasure's rigid segment is a handle and is not provided as a means of transferring additional force to the biting surfaces. The handle has sufficient mass to support the stated function of a handle, but at no point does Frasure imply that the handle has sufficient mass to supply a weight and torque to the biting surfaces.

Frasure's design is incapable of exercising the desired portion of the lips (the embouchure muscles), or any portion of the facial muscles requiring exercise by a wind musician. Frasure's design provides no means for projecting weight out further from the plane of the face and would not allow a wind musician to hold the device using an embouchure shape comparable to that being used when playing, which could therefore actually cause distortion in playing form. Frasure's device has no actual overlap in practice to the use of the Present Invention. As such, the Present Invention provides unique functionality and benefits unrelated to those presented by Frasure.

The last O.A. noted that Nava's system does the following:

- (1) Has a rigid segment and a means for applying force to said rigid segment
- (2) Has a rigid segment coated with a food grade material  
(since it is held in the mouth)
- (3) Has weights that can be variably positioned on the rigid projecting

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segment.

However, Nava's rigid segment and means for applying force to said rigid segment are only applicable to a rigid segment which is held exterior to the mouth, being slipped over a protruding tongue in such a fashion that the tongue, and only the tongue, can be exercised in an isometric fashion or through limited tongue movements.

The last O.A. deduced that Nava's tongue exerciser would be coated with a food grade material, as it is held in the mouth. However, Nava's exerciser isn't truly held in the mouth, and the patent neither states, nor implies, nor graphically shows, that there is any coating on the general substrate used to form the exerciser.

Nava's design uses a dumbbell design to apply weights to the tongue, which are shown as being applied in a symmetric fashion. This design is not generally compatible with applying varying levels of twisting torque moment and, in general practice, is specifically designed to prevent such forces from being generated. Nava's design can theoretically present more bending torque to the tongue by being physically slid further out along the tongue. However there is no means stated, shown, nor or implied by Nava for having weights projecting out perpendicular to the plane of the face.

Nava's design is incapable of exercising the desired portion of the lips, or any portion of the facial muscles needing exercise by a wind musician. Nava's design provides no means for projecting weight out further from the plane of the face, it does not allow a wind musician to hold the device using an embouchure shape comparable to that being used when playing, and therefore has no actual overlap in practice to the use of the Present Invention. As such, the Present Invention provides unique functionality and benefits unrelated to those presented by Nava.

**Th Pres nt Inventi n Produc s Un xpected Results**

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The proposed invention provides a means for wind musicians to exercise their embouchure muscles while holding the proper embouchure shape necessary for playing. This produces results unlike those proposed in prior art, which focuses on either general physical health, such as maintenance of the jaw or tongue muscles, or which focuses on facial aesthetics, such as tightening of the facial muscles to maintain a toned and healthy appearance.

The Present Invention specifically focuses on improving the ability of the wind musician to play by strengthening the muscles that allow a musician to correctly form the controlled aperture with the strength necessary to maintain tone and pitch. This muscle strength directly impacts a musician's range, ability to control air leakage, and reduces the force with which the musician must hold their instrument against or between the lips to maintain playing ability as the muscles tire over the course of a playing event.

The invention also allows wind musicians to visualize and focus on their aperture location, i.e. allowing musicians who unsuccessfully play off-center to work on moving their embouchure placement to a more successful location in a shorter time period. This allows for shorter "downtime" to complete the embouchure change.

The invention allows wind musicians who are incapable of practicing due to lip injury, canker sores, cold sores, lung, or rib injuries to maintain their embouchure strength during their period of healing. This allows them to resume their professional activities quickly without a protracted period of practice to regain those skills lost due to muscle atrophy. Some professionals currently feel they cannot miss more than a day or two of playing without losing strength.

#### **The Present Invention Produces Unappreciated Advantages**

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Up until the Present Invention, those skilled in the art of performance failed to realize the advantages of exercising their embouchure using lip weights that mimic the various aperture sizes utilized in actual practice.

**The Present Invention has Received Professional Recognition**

Since being released commercially, the Present Invention has been favorably reviewed and endorsed by professional artists of a variety of instruments from the wind family of instruments, and has been favorably reviewed on brass websites independent of the applicant and without the applicant's sponsorship or support.

**Frasure And Nava Do Not Contain Any Justification To Support Their Combination**

With regard to the proposed combination of Nava and Frasure, it is well known that in order for any prior-art references themselves to be validly combined for use in a prior-art § 103 rejection, the references themselves, or some other prior art, must suggest that they be combined.

**The Novel Physical Features Of Claims 21 And 30 Produce New And Unexpected Results And Hence Are Unobvious And Patentable Over These References Under § 103.**

Also, applicant submits that the novel features of claim 21 and 30 are also unobvious and hence patentable under § 103 since they produce new and unexpected results over Frasure and Nava, or any combination thereof.

The new and unexpected results are: the ability to exercise the facial muscles used to play a musical wind instrument while they are formed into the proper shape musicians employ while playing, and doing so independently of the jaw and tongue muscles. This in turn allows further exercise of these muscles using a combination of the device and

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exercises that move the muscles independent of the jaw, in a non-isometric fashion, which allows for range-of-motion flexibility exercises to be integrated into a workout.

The systems devised by Nava and Frasure are incapable of exercising the muscles the Present Invention is targeted at in any fashion. Nava and Frasure do not make any reference to the possibility for exercising the embouchure muscles, and do not describe constricting the muscles to be exercised into any specific shape.

The Present Invention provides for a vastly different effect than the systems of Frasure and Nava, or any combination of them, which are focused on exercising the jaw and tongue muscles, respectively.

Furthermore, the Present Invention provides for significant and critical different effects than are demonstrated by any other prior art. The effects of the stated lip strengthening mechanism, which provides wind musicians with a means for strengthening embouchure muscles by doing facial exercises independent of the jaw muscle while holding weights using the correct embouchure form for playing a wind instrument, is a unique and novel solution with unique benefits neither implied, nor stated, nor possible through any application of the prior art.

The novel features of the applicant's system which effect these differences are, as stated, clearly recited in claims 21 and 30

**The Dependent Claims Are *A Fortiori* Patentable Over Frasure and Nava**

New dependent claims 22 to 29 incorporate all the subject matter of claim 21 and add additional subject matter which makes them *a fortiori* and independently patentable over these references.



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New dependent claims 31 to 39 incorporate all the subject matter of claim 30 and add additional subject matter which makes them *a fortiori* and independently patentable over these references.

#### Conclusion

For all of the above reasons, applicant submits that the specification and claims are now in proper form, and that the claims all define patentable over the prior art. Therefore the applicant submits that this patent is now in a condition for allowance, which action is respectfully solicited.

#### Conditional Request for Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully,

Julie L. Patton



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**Certificate of Facsimile Transmission:** I certify that on the date below I will fax this communication and referenced attachments, if any, to group TC3700 of the Patent and Trademark Office at the following number: **703-872-9302**

2003 December 22

  
Julie L. Patton, Applicant